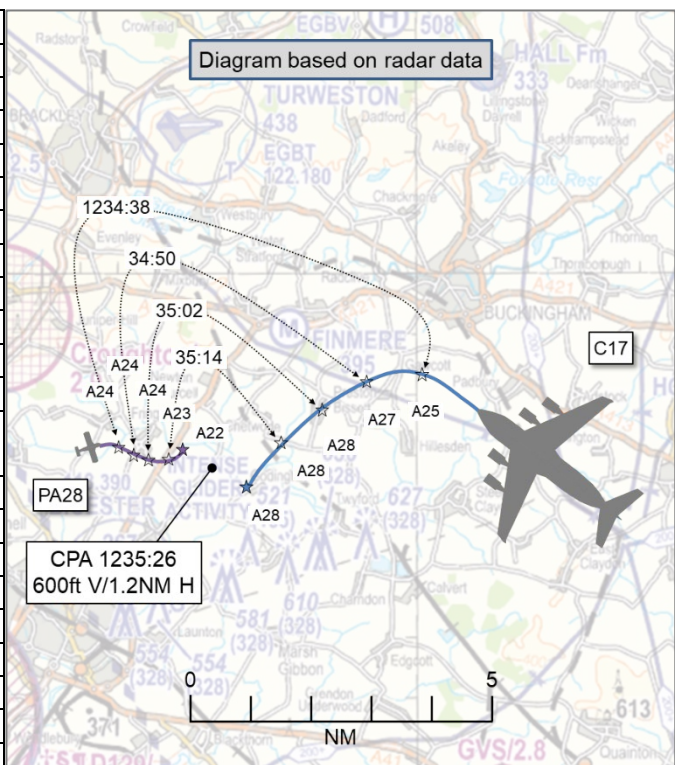


**AIRPROX REPORT No 2024179**

Date: 31 Jul 2024 Time: 1235Z Position: 5157N 00105W Location: 3NM NE Bicester

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	C17	PA28
Operator	HQ Air (Ops)	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	Basic
Provider	Benson	Oxford
Altitude/FL	2800ft	2200ft
Transponder	A, C, S+	A, C, S
Reported		
Colours	Grey	White/blue
Lighting	'All on'	Land/taxy, nav, HISL, beacon
Conditions	VMC	VMC
Visibility	NR	>10km
Altitude/FL	2800ft	2000ft
Altimeter	QNH (1014hPa)	QNH (NR hPa)
Heading	210°	NR
Speed	230kt	NR
ACAS/TAS	TCAS II	Not fitted
Alert	RA	N/A
Separation at CPA		
Reported	500ft V/1NM H	1000ft V/5NM H
Recorded	600ft V/1.2NM H	



**THE C17 PILOT** reports that on completion of a flypast at RAF Halton the crew began a pre-planned route to recover to RAF Brize Norton. The routing was planned to remain clear of airspace and noise sensitive areas, and proceeded to the north of Oxford and Woodstock, then west towards Little Rissington before [returning to] Brize. Enroute to the flypast, the crew noted the significant threat posed by general aviation traffic and had already encountered several Traffic Advisories and manoeuvred to avoid conflicts. During this period, they were in receipt of a Traffic Service from Benson Approach. During the climb-out [from the flypast], they climbed to 2000ft altitude, initially to stay below the Luton ATZ [sic] and, once clear, they requested a climb with Benson to 2800ft but immediately noticed an aircraft at 3000ft directly ahead, and so delayed climb until confirmed clear. They then climbed to and levelled at 2800ft, were cleared "own navigation Brize" by Benson, and continued on a north-westerly heading at 230kt. Benson cleared them again own navigation, to which they replied in the affirmative, but Benson then gave them a vector "turn left heading 230, vectors to Brize", a heading change of about 70°. They complied with the vector and almost simultaneously noted that this vector turned them directly towards an aircraft on the TCAS display at 5NM distance and 200ft below. Benson then also called out this traffic and confirmed the bearing, distance and altitude separation, but they were unable to visually identify the traffic. At this point the TCAS issued a Traffic Alert (TA), enunciated "TRAFFIC TRAFFIC" and highlighted the approaching conflict. Benson Approach then directed "turn further left heading 210" to which they replied and complied, still searching for the traffic and preparing to climb to avoid. On rolling wings level from this second vector, the TCAS issued a Resolution Advisory (RA) and directed "MONITOR VERTICAL SPEED" with a visual indication commanding no descent. The handling pilot engaged the TCAS sub-mode in response and manually began a shallow climb to increase separation with the traffic and comply with the RA command. The other aircraft was visually acquired by the right seat additional pilot within an estimated [lateral separation of] 1NM as it passed underneath and slightly behind. In the middle of this manoeuvre, Benson Approach called again requesting that they change the squawk code for the recovery to Brize. The non-handling pilot responded with "standby, responding

to a TCAS RA". Once clear of conflict, the autopilot and auto throttles were reengaged, and the aircraft recovered to Brize without further incident.

The pilot assessed the risk of collision as 'Medium'.

**THE PA28 PILOT** reports they were 'in a flying lesson' and were north of Bicester town. No avoiding action was taken because they did not consider the event to be an Airprox.

The pilot assessed the risk of collision as 'None'.

**THE BENSON TRAINEE CONTROLLER** reports being a trainee in Benson Zone at the time of the incident, controlling [the C17] inbound to RAF Brize Norton under a Traffic Service after a flypast at RAF Halton. Approaching Brize, there were multiple tracks in the vicinity of Oxford. They called the relevant one to [C17 C/S] and gave them 'own navigation' to Brize. The C17 [pilot] elected not to change heading and instead maintain their track of 300° to track north of Oxford. They gave them a turn to 230° to get them towards Brize more expeditiously, which they either didn't hear or didn't take. A few sweeps later they amended the heading to 210° for Brize and the pilot complied. They called the Oxford traffic again as they had turned them towards it; the [C17] pilot was not then visual. They started the handover with Brize and changed the squawk to the one issued. During the handover the [C17] pilot reported a TCAS RA. They had to ask the instructor for confirmation as they didn't hear the transmission correctly. They then acknowledged this and gave [C17 C/S] the Brize Zone frequency. The Benson trainee controller noted that they had turned the aircraft to shorten their transit, inadvertently introducing a risk of collision. They called the aircraft to the C17 multiple times but the pilot was not visual and took a TCAS RA to avoid. All equipment worked as expected.

**THE BENSON SUPERVISOR** reports that they were the ATCO I/C controlling in Approach at the time of this incident. They watched the [C17] track towards the northeast of Brize after it was given own navigation and then the Zone trainee opted to give the [C17 pilot] a steer, which put the [C17] on a more expeditious route into Brize. The [C17 pilot] took the steer and shortly afterwards declared a TCAS RA.

**THE OXFORD CONTROLLER** reports working [PA28 C/S] whilst under a Basic Service to the northeast of Oxford. They recalled seeing an aircraft squawking 4520 doing some general handling in the vicinity of Bicester at the same time as an aircraft wearing a Brize squawk which was moving quite quickly. Due to the Oxford aircraft not having Mode S, they made a blind call asking the aircraft in the vicinity of Bicester to identify themselves, to which [the PA28 pilot] replied it was them. They provided Traffic Information on the [Brize-bound] aircraft manoeuvring to the east by 1-2NM because they assumed it was a medium or heavy wake turbulence aircraft due to the [Brize] squawk. They also gave a caution to the possibility of wake turbulence below and behind because, again, they were unsure of the aircraft type. [PA28 C/S] said they were visual with the traffic and were manoeuvring to remain clear. The pilot continued the flight with no issue or mention of coming into close proximity with the C17.

## Factual Background

The weather at Oxford was recorded as follows:

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METAR EGTK 311250Z 09009KT 040V140 CAVOK 28/13 Q1014=  
METAR EGTK 311220Z 10009KT 050V130 CAVOK 28/12 Q1014=
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## Analysis and Investigation

### Military ATM

An Airprox occurred on 31 Jul 24, approximately 5NM northeast of Oxford at approximately 1230 UTC. The C17 was on recovery to RAF Brize Norton following a flypast at RAF Halton, in receipt of a Traffic Service from Benson Zone. The PA28 was conducting a medium level navigation exercise and in receipt of a Basic Service from Oxford.

Utilising occurrence reports and information from the local investigations, outlined below are the key events that preceded the Airprox.

The Benson Zone controller was a trainee controller under the direct supervision of an Instructor.

At approximately 1230, having completed the flypast at RAF Halton, the C17 conducted a northwest turn to establish on a pre-planned recovery routeing for RAF Brize Norton. Climbing initially to 2000ft AMSL to remain below Controlled Airspace, the C17 [pilot] then requested further climb to 2800ft AMSL which was achieved, albeit delayed until clear of conflicting traffic crossing above.

At approximately 1232 the Benson Zone controller issued the C17 pilot with own navigation for Brize Norton, which they acknowledged but remained initially on the north-westerly heading. Intending to provide the most expeditious recovery, the Benson Zone controller subsequently issued a left-hand turn on to 230°. Complying with the instructed turn, at approximately 1234 the Benson Zone controller provided Traffic Information to the C17 pilot regarding the PA28, which was reported as at a range of 5NM and 500ft below. This coincided with the C17 pilot receiving an indication of the PA28 on TCAS. The C17 pilot did not acknowledge the Traffic Information given their activity in trying to visually acquire the PA28 and react to the TCAS TA. The Benson Zone controller then issued a further left turn onto 210°, again to expedite the recovery routeing. Following receipt of a TCAS RA, the C17 pilot visually acquired the PA28 at an estimated range of 1NM. Whilst actioning the TCAS RA the Benson Zone controller initiated the handover of the C17 to Brize Norton Radar.

CPA occurred at 1235:26 and was recorded as 1.2NM and 600ft separation.

A local investigation was conducted by RAF Brize Norton<sup>1</sup> to identify the Air Traffic Service-related causal and aggravating factors. The outcome of the investigation was a Loss of Safe Separation resulting in a TCAS RA; however, no Air Traffic Service-related factors were identified as causal factors. The Benson Zone controller provided relevant Traffic Information that eventually enabled the C17 pilot to visually acquire the PA28. The congested nature of the airspace during the period preceding the Airprox was identified as an aggravating factor.

Whilst the Benson Zone controller provided relevant Traffic Information, which ultimately fulfilled their requirements iaw the Traffic Service provision, lessons have subsequently been identified regarding the prioritisation of expeditious routeing and provision of aircrew situational awareness. The C17 crew was surprised by the issuing of a turn that positioned them near potentially conflicting traffic, as they had not been issued Traffic Information prior to the turn instruction. Had they been able to visually acquire the traffic before commencing the turn it would have enabled continued aircrew situational awareness. These lessons have been addressed as part of local controller Standards and Training activities.

### **UKAB Secretariat**

The C17 and PA28 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>2</sup>

### **Oxford Occurrence Investigation**

This Airprox occurred during light to moderate traffic levels. The Oxford Radar controller operating on frequency 125.090MHz, the RAD2/Director position was closed.

[PA28 C/S] departed Oxford at time 1203, the pilot of [PA28 C/S] first made contact with Oxford Radar at time 1206 whereby the following exchanges occurred:

1206: [PA28 C/S]: Oxford Radar, [PA28 C/S], departed northwest, request Basic Service.

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<sup>1</sup> Benson Radar is provided as part of the Southern Terminal Air Traffic Control Centre located at RAF Brize Norton.

<sup>2</sup> (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

1206: OXF RAD: [PA28 C/S], Oxford radar, Basic Service, no level restriction.

1206: [PA28 C/S]: No level restriction, [PA28 C/S].

The pilot of [PA28 C/S] continued to operate in receipt of a Basic Service to the northwest of Oxford Aerodrome. At 1221 the Oxford Radar controller passed Traffic Information on a conflicting coastguard aircraft [...] operating in their vicinity at a similar level and at 1224 the Oxford Radar controller passed information that Hinton-in-the-Hedges was notified as active with parachuting. [PA28 C/S] continued eastbound crossing the Oxford FAT for RW19 at 1230.

At time 1232, a handover between Oxford Radar controllers occurred, whereby it's handed over, "[PA28 C/S] is that one" and the electronic marker is seen to select the aircraft on the situation display (at this time, [PA28 C/S] was operating just south of the Croughton HIRTA on an easterly track).

At time 1235, the Oxford Radar controller initiated the following exchange:

1235: OXF RAD: Station just north of Bicester, who are you sorry?

1235: [PA28 C/S]: Erm [PA28 C/S].

1235: OXF RAD: [PA28 C/S], you can probably see it but you've got fast moving Brize traffic southeast of you by one mile, caution wake turbulence below and behind.

1236: [PA28 C/S]: Yeah, roger, we turned away from him, thank you, [PA28 C/S].

The CPA between the two aircraft was approximately 1.2NM laterally, Mode C of [PA28 C/S] showed 2200ft and the Mode C of [C17 C/S] showed 2800ft.

#### -Analysis-

[PA28 C/S] had departed Oxford and requested a Basic Service on first contact with the Oxford Radar controller, this is the service that was then subsequently provided by the controller. It was noted that although the Oxford Radar controller specified "Basic Service" and this was noted on the flight progress strip, it was not read back by the pilot.

In accordance with CAP774 the pilot should not expect any form of Traffic Information from a controller under a Basic Service and that whether traffic information has been provided or not, the pilot remains responsible for collision avoidance without assistance from the controller. Likewise, even though the controller had access to surveillance-derived information, it was noted again that [PA28 C/S] was operating under a Basic Service and thus the controller wasn't required to identify nor monitor the aircraft's flight.

That said, the controller was deemed to have executed an adequate provision of 'duty of care' within this incident and similarly acted in accordance with ((UK) SERA.9005(b)(2) and GM1 (UK)SERA.9005(b)(2)). [PA28 C/S] hadn't been formally identified by the Oxford Radar controller, however, at time 1235, the Oxford Radar controller attempted to initiate further contact with an aircraft on the Oxford Conspicuity squawk (4520) having observed an apparent conflict with an unknown aircraft squawking 3607.

As [PA28 C/S] wasn't Mode S equipped the controller reached out asking, "Station just north of Bicester, who are you sorry?". From here the pilot reported, "[PA28 C/S]" and the controller passed the following traffic information, "[PA28 C/S], you can probably see it but you've got fast moving Brize traffic southeast of you by one mile, caution wake turbulence below and behind". The traffic information passed was deemed to be accurate, however, it omitted information on the conflicting aircraft's indicated level. The pilot of [PA28 C/S] replied, "Yeah, roger, we turned away from him, thank you, [PA28 C/S]", clearly indicating that they must have had the aircraft in sight. It was noted that the Oxford Radar controller referred to the aircraft as, "Brize traffic", however, the conflicting

aircraft was squawking 3607 at the time, indicating they were in receipt of a service from Benson Radar. Following the Airprox, at 1237 the aircraft was seen to change to a 3740 squawk, likely indicating the aircraft was now in receipt of a service from (and inbound to) Brize Norton.

The unit was content that given the service [PA28 C/S] was operating in accordance with (Basic Service) the controller had gone above and beyond that which was required of them. The provision of Traffic Information to [PA28 C/S] was supported under a 'Duty of Care' and likely aided the situational awareness of the pilot of [PA28 C/S] in order for them to exercise their own responsibilities in regards to collision avoidance.

#### PROBLEM STATEMENT:

Two aircraft flew in such proximity that a pilot on board felt safety of the aircraft involved may have been compromised. Airprox occurrences have the potential to lead to a MAC and subsequent loss of life.

#### DIRECT CAUSE:

Aircraft operated in such proximity to each other as to create the collision hazard.

#### CONTRIBUTORY FACTORS:

Unusual aerial activity, C17's are not routinely observed to operate within this area.

#### CAUSAL FACTORS:

Believed to be a late sighting by one or both of the [pilots] involved.

#### Root Cause Analysis

Situational awareness downgraded to the point whereby sighting of conflicting aircraft was so late that an Airprox occurred.

#### Root Cause Corrections

Not owned by Oxford.

### Comments

#### HQ Air Command

The C17 crew had expected the potential for significant traffic and had a sensible return plan to fly clear of any airspace and noise sensitive areas. The C17 crew had been cleared own navigation; however, the Benson trainee controller provided vectors which would expedite their routing to Brize Norton. Although well intended, the vectors effectively placed the C17 into a position of conflict. The crew had not been given information about this traffic prior to the turn, reducing their situational awareness. The C17 TCAS issued a Traffic Advisory, but the crew was not visual with the other aircraft. A TCAS RA was followed by the C17 crew with the non-operating pilot becoming visual during the manoeuvre.

### Summary

An Airprox was reported when a C17 and a PA28 flew into proximity 3NM northeast of Bicester at 1235Z on Wednesday 31<sup>st</sup> July 2024. Both pilots were operating under VFR in VMC, the C17 pilot in receipt of a Traffic Service from Benson and the PA28 pilot in receipt of a Basic Service from Oxford.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board agreed that although the C17 pilot had been given headings by the Benson trainee controller, they had also been given 'own navigation' and had been free to manoeuvre in Class G airspace, especially in response to Traffic Information from any recognised source. With the benefit of hindsight it was apparent that a degree of inquisitiveness by the Benson trainee controller (or indeed the OJTI) or the C17 crew could have clarified the intentions of the C17 crew and resolved the circumstances that, in the event, had contributed to the Airprox. Despite the C17 crew having been in receipt of a TCAS RA, the PA28 pilot had seen the C17 and separation at CPA had been such that there had been no risk of collision, Risk E. Members felt that the following Contributory Factors applied:

**CF1:** The OJTI did not comment when the Benson trainee controller passed the C17 pilot a heading that took it into proximity with the PA28 and having already passed 'own navigation'.

**CF2:** The Benson trainee controller passed the C17 pilot a heading that took it into proximity with the PA28.

**CF4:** The C17 pilot maintained a heading that took them into proximity with the PA28 having situational awareness of it from Traffic Information and their TCAS.

**CF5:** The C17 pilot flew close enough to cause concern despite situational awareness.

**CF6:** The C17 pilot was concerned by the proximity of the PA28.

**CF7:** The C17 TCAS issued an RA.

**CF8:** The C17 crew saw the PA28 at about CPA, effectively a non-sighting.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

	2024179			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Manning and Equipment</b>				
1	Human Factors	• Recurrent/OJT Instruction or Training	Events involving on the job training of individuals/ personnel	
<b>• Situational Awareness and Action</b>				
2	Human Factors	• Traffic Management Information Provision	An event involving traffic management information provision	The ANS instructions contributed to the Airprox
<b>Flight Elements</b>				
<b>• Tactical Planning and Execution</b>				
3	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
4	Human Factors	• Lack of Action	Events involving flight crew not taking any action at all when they should have done so	Pilot flew close enough to cause concern despite Situational Awareness
5	Human Factors	• Unnecessary Action	Events involving flight crew performing an action that was not required	Pilot was concerned by the proximity of the other aircraft
<b>• Electronic Warning System Operation and Compliance</b>				

6	Contextual	• ACAS/TCAS RA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system resolution advisory warning triggered	
• See and Avoid				
7	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: E.

Safety Barrier Assessment<sup>3</sup>

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

**Ground Elements:**

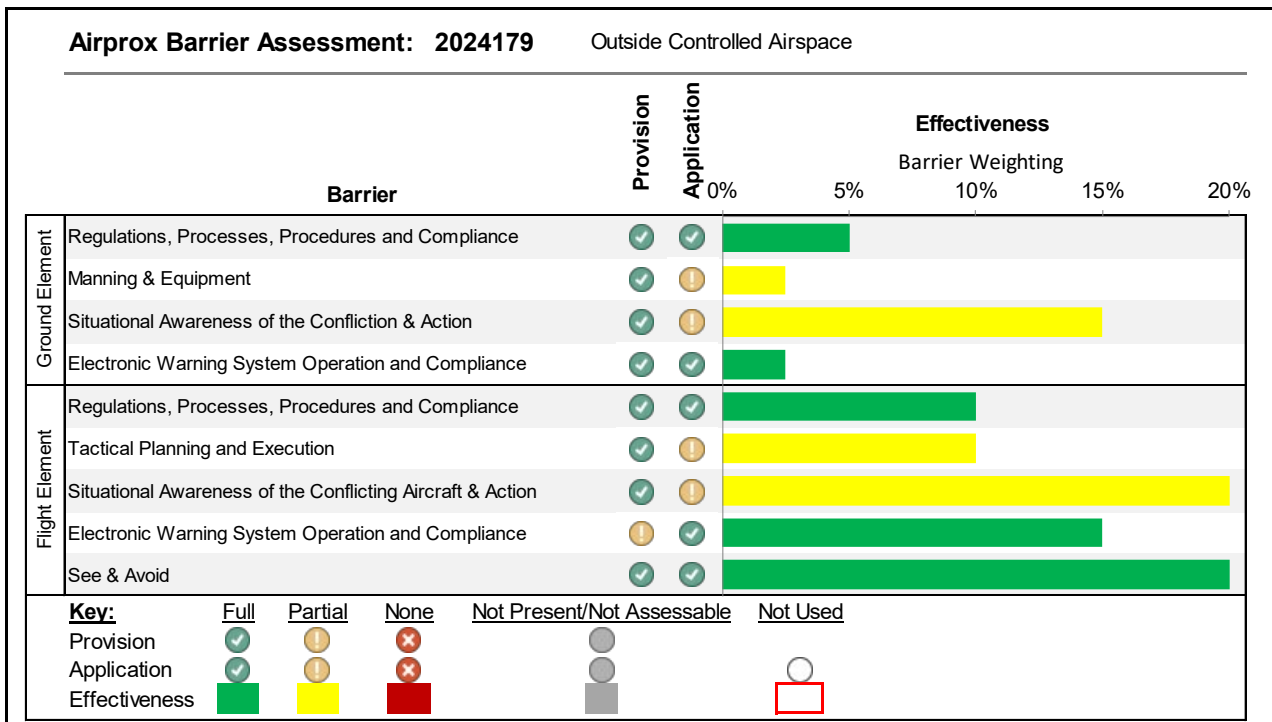
**Manning and Equipment** were assessed as **partially effective** because the Benson trainee controller turned the C17 towards the PA28 and the OJTI did not comment or intervene.

**Situational Awareness of the Confliction and Action** were assessed as **partially effective** because the Benson trainee controller instruction to the C17 pilot to turn left contributed to the Airprox.

**Flight Elements:**

**Tactical Planning and Execution** was assessed as **partially effective** because the C17 pilot turned towards the PA28 despite having been given Traffic Information and ‘own navigation’.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **partially effective** because the C17 pilot flew close enough to the PA28 to cause themselves concern despite situational awareness from their TCAS display.



<sup>3</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).